

# NTF

**NORDIC TEST FORUM**

invites to

# TestForum 2024

*A Nordic event for exchange of experience and know-how  
within the field of production test of electronics.*

*Meet colleagues and experts, gain knowledge about trends  
and best practices in the area of test of electronics.*

Tuesday and Wednesday, November 26<sup>th</sup> and 27<sup>th</sup>, 2024

**Clarion Hotel, Helsinki, Finland**



## TestForum 2024 November 26<sup>th</sup> & 27<sup>th</sup> Helsinki, Finland

On behalf of the Nordic Test Forum committee, I would like to invite you to Helsinki to the annual NTF conference, TestForum 2024. This is the fourth time of visiting Finland for our annual conference.

TestForum 2024 has an excellent technical program, focusing on battery, power and automotive test, test automation, structural test JTAG based test and more.

Among the presenters, we find experts from Finland, Germany, Austria, the Netherlands, France, Italy, Denmark, Norway, Sweden and USA.

This year's Keynote speaker is Antti Kumara, Senior Director Operations at Danfoss Drives Oy, Vaasa. He will speak about how to adapt to the changing world of electronics.

At the end of the first day, we will also have an interesting panel discussion on the topic: "Increasing productivity in Test Generation". In the panel discussion, we will try to highlight some solutions of progress in e.g. automation in test generation, but also other approaches that can help us in increasing productivity and efficiency in our work as test engineers.

As an added bonus, this year we will have a LabVIEW tutorial by CN Rood after the formal program.

The conference, the conference dinner, the mini exhibition and the tutorial offer a great opportunity for technical and business discussions.

On behalf of the committee, I wish to welcome you to TestForum 2024!

Yours sincerely



Knut Båstøløkken  
Chairman of *Nordic Test Forum*

**Key Note Speaker**

Antti Kumara,  
**Senior Director Operations, Danfoss Drives Oy Vaasa**



Antti Kumara has been working for Danfoss Drives for +20 years, following the growth from local small AC-drive factory to first go to global manufacturer and then be part of the true global player in multiple industries. Vaasa factory is well known for its agility and Lean implementations in Finland getting multiple Awards from Lean Association of Finland.

## **Nordic Test Forum in Brief**

*TestForum* is an annual event that *Nordic Test Forum (NTF)* runs every fall/early winter. *TestForum* typically has 3 thematic areas and cover a broad balance of test and inspection.

*TestForum* has its roots back the late eighties, where it originated as an event for the Norwegian electronics industry. However, from the late part of 2001 a group of people from Norway, Sweden and Denmark established the network, *Nordic Test Forum*. Later on, this activity (including the *TestForum* event was extended to include all the Nordic countries. The language of the official presentations is English. Content and focus of the *TestForum* varies over time, but always within topic areas in focus at a given point in time.

*TestForum* has its main emphasis on issues relevant to production managers, engineers and technicians working in the fields of production, test, inspection and validation of electronics. At *TestForum* events we offer technically relevant presentations on methodology, tools, modules/instruments and available technology. The interaction between users and suppliers within the focus areas is an important asset of *TestForum*, and this balance and interaction is pursued in presentations, panel discussions, and in the planning of the events.

### **TestForum Aims at:**

- Creating and sustaining a relevant, balanced and coherent interaction between users as well as between users and suppliers of solutions for test, inspection, validation and production of electronics.
- Providing an up-to-date view on new methodologies and tools for relevant test, inspection, validation and production of electronics.
- Establishing a relevant and balanced view on equipment, systems, tools and software from tool vendors in the domain.

### **Target Audience of TestForum**

Engineers and technicians, managers and planners within the fields of electronics production and test, inspection and validation. Includes also decision makers in organizations that procure equipment, tools and systems for production and test, inspection and validation of electronics.

### **Executive Committee of TestForum event and NTF organization**

Knut Båstoløkken Kitron AS, Norway (Chairman)  
Birger Schneider CHAMAJ, Denmark (Treasurer)  
Bjørn B Larsen NTNU, Norway (Secretary)  
Artur Jutman Testonica Lab, Estonia  
Erik Larsson Lund University, Sweden  
Lars Kongsted-Jensen EP-TeQ A/S, Denmark  
Mats Klarholm Columbia Elektronik, Sweden  
Mattias Ericsson AddQ, Sweden  
Mick Austin JTAG Technologies, Finland  
Mika Pussinen Nokia, Finland  
Paulius Musteikis UAB Kitron, Lithuania  
Raimesdas Sodaitis EP-TeQ UAB, Lithuania  
Stig-Gunnar Jensen Delta Electronics, Norway  
Thomas Goetz Keysight Technologies (associate member), Germany

## Become a Member of Nordic Test Forum

If you are involved in production test, validation test, and inspection of electronics and your professional work is related to activities in the Nordic countries as a test professional, design engineer, manufacturer, supplier of solutions, consultant, etc., you may register as member of Nordic Test Forum (NTF) in order to benefit from:

- Exchange of know-how in testing
- Increased contact network in the Nordic countries
- Surveillance and information of international activities in the area of test and inspection
- Discounts at NTF seminars and TestForum events
- Membership list

Please register on the WEB page: <http://www.NordicTestForum.org>

## TestForum 2024 Local Organizer

The local organizer is:

**Mika Pussinen**

Nokia  
Kaapelitie 4  
90620 Oulu  
Finland

Phone: +358-408032501  
Mobile: +358-71-8054711  
E-mail: [mika.pussinen@nokia.com](mailto:mika.pussinen@nokia.com)

## Technical Program of TestForum 2024

### Nordic Test Forum (NTF) Annual Assembly, November 25<sup>th</sup>, 2024

The NTF organization holds an annual general assembly a day before the TestForum conference. This year it will be held on **November 25<sup>th</sup> at 20:00**. The agenda and motions will be dispatched to the members in a separate mailing.

### Tuesday, November 26<sup>th</sup>, 2024

Time	Titles	Speakers or additional info
08:15-08:30	Registration	
<b>08:30-08:40</b>	<b>Welcome / Introduction</b>	Knut Båtstøløkken
<b>08:40-09:40</b>	<b>Key Note Session</b>	<i>Chairman: Knut Båtstøløkken</i>
08:40-09:40	"Adaptation to the changing world".	Antti Kumara, Senior Director, Operations, Danfoss Drives Oy Vaasa
<b>09:40-10:20</b>	<b>Exhibitor Forum: short presentations</b>	<i>Chairman: Birger Schneider</i>
10:20-11:00	Coffee Break / Exhibition	
<b>11:00-12:30</b>	<b>Session 1: Power / Battery / Automotive- test</b>	<i>Chairman: Artur Jutman</i>
11:00-11:30	1.1 Role and impact of electrical testing in EV battery manufacturing	Thomas Goetz, Keysight
11:30-12:00	1.2 Testing your battery management system without a battery	William Baars, CN Rood
12:00-12:30	1.3 The growing demand for testing in the world of electric mobility	Walter Gueli, Seica
12:30-13:30	Lunch	
<b>13:30-15:00</b>	<b>Session 2: Structural test</b>	<i>Chairman: Paulius Musteikis</i>
13:30-14:00	2.1 How to test LEDs on electronic boards	Lothar Diez, SPEA
14:00-14:30	2.2 LED test on TERADYNE ICT systems	Martial Boucher, TERADYNE
14:30-15:00	2.3 ICT for Data center, AOI for LED & AXI for Automotive Electronics.	Anthony Wang, TRI Test Research Europe GmbH
15:00-15:40	Coffee Break / Exhibition	
<b>15:40-17:10</b>	<b>Session 3: JTAG based test</b>	<i>Chairman: Raimedas Sodaitis</i>
15:40-16:10	3.1 Utilizing on-board MCUs and/or FPGAs for test under control of JTAG Functional Test (JFT) for LabVIEW	Anthony Sparks, JTAG Technologies
16:10-16:40	3.2 Flying Probe Test & Boundary Scan	Jan Heiber, GÖPEL electronic GmbH, Embedded JTAG Solutions
16:40-17:10	3.3 Test Access Port - A gateway to exploit from inception of a product to its end of life	Mika Pussinen, Nokia
17:10-17:40	Fruit & Refreshments / Exhibition	
<b>17:40-19:00</b>	<b>Panel debate</b> Increasing productivity in Test Generation	<i>Panel moderator: Birger Schneider</i>
<b>19:30</b>	<b>Gala Dinner</b>	

Wednesday, November 27<sup>th</sup>, 2024

Time	Titles	Speakers or additional info
<b>08:30-10:00</b>	<b>Session 4: Best practices in manufacturing test</b>	<i>Chairman: Erik Larsson</i>
08:30-09:00	4.1 Practical angles on Sustainability in Electronics Manufacturing	Lars Kongsted-Jensen, EP-TeQ
09:00-09:30	4.2 State Machine-based test fixture control	Daniel Rhodin, E-Sharp AB
09:30-10:00	4.3 High Speed PCB design considerations to ensure Signal Integrity	Hermann Reischer, Polar Instruments
10:00-10:45	Coffee Break / Exhibition	
<b>10:45-12:15</b>	<b>Session 5: Test Automation</b>	<i>Chairman: Mattias Ericsson</i>
10:45-11:15	5.1 Test Automation	Jean-Luc Blouet, IPTE
11:15-11:45	5.2 Beyond Manual Testing: Embracing Automation for a Competitive Edge	Dragos Beldiman, Brooks
11:45-12:15	5.3 How to boost Competitiveness and Increase Flexibility in Industrial Electronics Testing	Tapio Marttila, OiTec Oy
12:15-13:30	Lunch	
<b>13:30-15:00</b>	<b>Session 6: Test data analysis / Automatic inspection / Design for test</b>	<i>Chairman: Mats Klarholm</i>
13:30-14:00	6.1 AI-Powered Root Cause Analysis: Elevating Continuous Improvement in Electronics Manufacturing	Knut Bjarne Askim, Virinco
14:00-14:30	6.2 All about Voids - Inline X-Ray inspection of voids in solder joints	Andreas Türk, GÖPEL electronic GmbH, Inspection Solutions
14:30-15:00	6.3 Regionalization of PCBA manufacturing	Peter Liljedahl, Danfoss Finland
15:00-15:15	Closing Session: TestForum concluding remarks	<i>Knut Båttstøløkken Kitron</i>
15:15-15:30	Short break	
<b>15:30-16:30</b>	<b>Session 7: LabVIEW tutorial</b>	<i>Chairman: Lars Kongsted-Jensen</i>
15:30-16:30	LabVIEW tutorial	William Baars, CN Rood

## Exhibition

As usual, a mini exhibition will take place in frames of TestForum event where vendors are welcome to present their tools and methodologies related to production test. Exhibitors can make arrangements with NTF about exhibition space. If nothing special has been agreed, a table of about 60x120 cm<sup>2</sup>, as well as space for posters or similar material will be provided. Every exhibitor will be given 2-3-minute slot in the program for a brief introduction.

## Registration and hotel booking

The **Conference Fee** is EUR 660 for NTF members, EUR 360 for students and EUR 760 for others. The fee includes participation, food and refreshments from Tuesday morning to Wednesday afternoon as well as forum proceedings on a USB memory stick. Exhibitors pay EUR 1180, which also includes the participation of a single person.

The seminar fee will be invoiced directly to the organization, from which the participant comes. In the event of cancellation after the final registration date, or in the event of failure to appear, the entire fee is still due. On request, another person from the same organization can participate instead.

The hotel rooms are booked through the hotel directly on their website <https://app.mews.com/distributor/dd1501df-bcde-4244-b0d3-b09100834f83?mewsAvailabilityBlockId=71fbacf8-9051-4991-a8cf-b11e00ba1f09&mews-Start=2024-11-25&mewsEnd=2024-11-27>

Alternatively, you can contact the hotel directly. Reservations can be made from inhouse sales via email or phone call. It is open from Monday to Friday 8:00-17:00 local time.

Kindly contact Inhouse Sales via email at or via tel. +358 10 850 3820. [reservations.cl.helsinki@strawberry.fi](mailto:reservations.cl.helsinki@strawberry.fi)

If you make reservation by email or phone, please mention the allocation name "NTF2024" when making the reservation. Other details required for making a reservation are:

- Full Guest Name(s)
- Arrival Date
- Departure Date
- Valid Credit Card details (card number and expiry date) for guarantee
- Email Address
- Telephone Number

The room rate is paid directly by each participant to the hotel (i.e. not included in the seminar fee). **The room rate** is 150 EUR single room and 170 EUR double room per night, including breakfast.

Booking of rooms at the conference hotel is **not** mandatory for participation at the seminar.

The **registration deadline is Monday 4<sup>th</sup>, November 2024**, in order to **guarantee hotel room**. **Registration after this date is also possible**. However, the special room rate will no longer be valid, and we cannot guarantee that hotel rooms are available at the conference hotel.

Registration for TestForum 2024 can be done through the NTF website by using the following link.

- <https://testforum.nemtilmeld.dk/5/>

Alternatively, one can contact the TestForum secretariat at

Att.: Jytte Schneider  
Tel.: +45- 2579 1120  
E-Mail: [jytte.schneider@nordicestforum.org](mailto:jytte.schneider@nordicestforum.org)

Please indicate, whether you register as:

- |  |          |
|--|----------|
| • NTF member   | EUR 660  |
| • A non-member   | EUR 760  |
| • A student (with valid student ID)                          | EUR 360  |
| • An exhibitor, i.e. want to exhibit in the small exhibition | EUR 1180 |



## Clarion Hotel, Helsinki, Finland

TestForum 2024 will take place at Clarion Hotel Helsinki, which is situated very close to downtown Helsinki and the West Terminal Ferry port.

Details about the hotel is at: <https://www.strawberryhotels.com/hotels/finland/helsinki/clarion-hotel-helsinki/>

### Hotel address

Tyynenmerenkatu 2  
00220 Helsinki,  
Finland



### Getting to the hotel

From Helsinki Airport:

- Take the local service train P or I from the Airport to Helsinki main Railway station. NOTE you need to purchase a ticket either on the platform or using the HSL App before boarding the train. Then after arrival at the Helsinki main train station take either Tram number 7 or 9 directly to the hotel.
- Taxi fare from Airport is fixed price 35 Euro.
- 30 km, about 35 minutes by car.

#### By train

#### Trains

All Trains stop at the Helsinki main Railway station. After arrival at the Helsinki main train station take either Tram number 7 or 9 directly to the hotel.

